
IN THE U.S. PATENT AND TRADEMARK OFFICE

#7
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TC

APPLICANT: Takafumi SAKAMOTO et al.

SERIAL NO.: 10/067,856

FILED: February 8, 2002

FOR: Room Temperature Curable Compositions

GROUP: 1712

EXAMINER: ZIMMER, MARC S

# D E C L A R A T I O N

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir,

I, Takafumi SAKAMOTO, resident of c/o Silicone-Electronics Materials Research Center, Shin-Etsu Chemical Co., Ltd., 1-10, Oaza Hitomi, Matsuida-machi, Usui-gun, Gunma-ken, Japan, do hereby declare that:

1. I was graduated from Faculty of Synthetic Chemistry of Technical Department in Gunma University, Japan in March 1990. Since April 1990, I have been employed by Shin-Etsu Chemical Co., Ltd., the assignee

of the above-identified application. I have been engaged in research and development relating to room temperature vulcanizable organopolysiloxane compounds in the laboratory of the Company.

2. I am one of the named inventors of the above-identified application and hence, am familiar with the subject matter disclosed in said application.

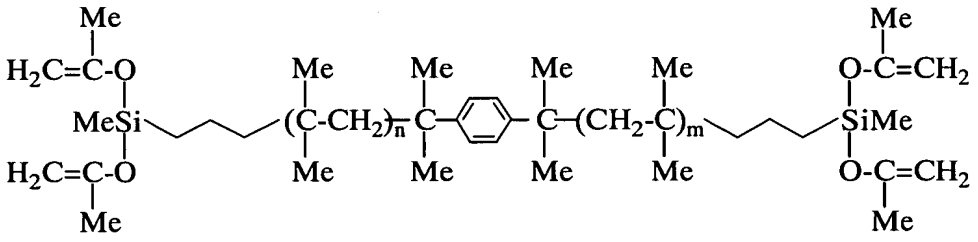
3. In order to show the feature of the present invention, I conducted the following experiments.

[Experiments]

Invention

A curable composition was prepared by mixing under anhydrous conditions 150 g of a mixture of a saturated hydrocarbon polymer of formula (4) (Mn = 5,800, Mw/Mn = 1.21) and a paraffinic process oil (trade name Diana Process PS-32 by Idemitsu Industries, Ltd.) as a hydrocarbon plasticizer in a weight ratio of 2:1, 2.90 g (0.05 mol) of acetone, 11.05 g (0.05 mol) of γ-aminopropyltriethoxysilane, 1.0 g of tetramethylguanidylpropyltrimethoxysilane, 75 g of colloidal light calcium carbonate (trade name MT-100 by Maruo Calcium K.K.), 75 g of heavy calcium carbonate (trade name Softon 1500 by Shiraishi Calcium K.K.), and

10 g of fumed silica (trade name Aerosil R-972 by Nippon Aerosil Co., Ltd.).



(4)

Rubber properties of the composition were examined in the same manner as in Example of the present specification. In this case, the properties of the sample which was heat treated at 150° C for 7 days after curing were also measured. The results are shown in Table 1.

The composition was worked into a sheet of 2 mm thick, which was allowed to stand in an atmosphere of 23° C and RH 50% for 7 days after curing. The resulting rubber elastomer was examined for physical properties (hardness, elongation and tensile strength) according to JIS K-6249. Further, the rubber elastomer was examined for physical properties (hardness, elongation and tensile strength) after heat treatment at 150° C for 7 days.

Comparison

The above procedure of Invention was repeated except that a polybutene (Nisseki Polybutene LV-50 by Nippon Petrochemicals Co., Ltd.) was used instead of the paraffinic process oil. The results are shown in Table 1.

Table 1

| | | Invention | Comparison |
|---|---|---|---|
| After curing | Hardness, Duro-A | 20 | 19 |
| | Elongation at break, % | 600 | 620 |
| | Tensile strength, MPa | 1.4 | 1.3 |
| After heat treatment | Hardness, Duro-A | 21 | 30 |
| | Elongation at break, % | 500 | 200 |
| | Tensile strength, MPa | 1.5 | 0.3 |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated this 16th day of June, 2003

Takafumi Sakamoto